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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,334	03/29/2004	Dou Yuanzhu	9281-4787	2686
7590 10/11/2005 Brinks Hofer Gilson & Lione P.O. Box 10395 Chicago, IL 60610			EXAMINER NGUYEN, HOANG V	
			ART UNIT 2821	PAPER NUMBER

DATE MAILED: 10/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/812,334

Applicant(s)

YUANZHU, DOU

Examiner

Hoang V. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2005.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-10 and 12-47 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-3,5-10 and 12-40 is/are allowed.
- 6) ☒ Claim(s) 41-43 and 45-47 is/are rejected.
- 7) ☒ Claim(s) 44 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 41-43 and 46 are rejected under 35 U.S.C. 102(e) as being anticipated by Heyde (US 6,756,942 B2).

Regarding claim 41, Heyde (Figures 1-2) discloses a patch antenna apparatus comprising a ground plane 3; a dielectric substrate disposed above the ground plane (col 3 lines 34-38); a patch electrode 16 provided on a surface of the dielectric substrate opposing the ground plane; current feed means 15 (col 2 lines 30-37) connected to the patch electrode; a metal frame 2 surrounding a peripheral surface of the dielectric substrate, the metal frame having an opening; and the opening of the metal frame disposed not to overlap with the patch electrode in a plan view of the patch antenna.

Regarding claim 42, as applied to claim 41, Figure 1 of Heyde shows that the height dimension of the metal frame 2 is larger than the thickness dimension of the dielectric substrate.

Regarding claim 43, as applied to claim 41, Figure 2 of Heyde shows that a plan-view shape of the metal frame 2 is substantially similar to a plan-view shape of an outer shape of the dielectric substrate.

Regarding claim 46, as applied to claim 41, Heyde teaches that the distance between the dielectric substrate and the metal frame are substantially uniform.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 45 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heyde in view of Van Hoozen (US 6,181,279 B1).

Regarding claim 45, Heyde discloses the claimed invention with a current-feed means in the form of a microstrip circuit instead of a pin connected to the patch electrode to permit the patch antenna to receive circularly-polarized waves. Van Hoozen (Figure 1) teaches a patch antenna comprising a current-feed pin 46 and 48 connected to the patch electrode to permit the patch antenna to receive circularly-polarized waves. Therefore, because the two patch current-feed means were art-recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to substitute Van Hoozen's current-feed pin with Heyde's current-feed means.

Regarding claim 47, Heyde discloses the claimed invention except that an area of the dielectric substrate is larger than an area of the patch electrode. Van Hoozen (Figure 2) teaches a patch antenna apparatus having an area of the dielectric substrate 20 being larger than an area of the patch electrode 12. It would have been obvious to one of ordinary skill in the art at the time

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the invention was made to employ Heyde's antenna apparatus with Van Hoozen's patch-substrate configuration, doing so would increase isolation between the patch electrode and the ground plane thus improving antenna performance.

Allowable Subject Matter

5. Claims 1-3, 5-10 and 12-40 are allowed.
6. Claim 44 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 1, 8, 19, 29 and 44, neither Taira et al nor Heyde specifically teach, among other features, a ground electrode disposed between the ground plane and the dielectric substrate.

Claims 2, 3 and 5-7 are allowed for depending on claim 1.

Claims 9, 10 and 12-18 are allowed for depending on claim 8.

Claims 20-28 are allowed for depending on claim 19.

Claims 30-40 are allowed for depending on claim 29.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoang V. Nguyen whose telephone number is (571) 272-1825. The examiner can normally be reached on Mondays-Fridays from 9:00 a.m. to 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoang Nguyen can be reached on (571) 272-1825. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

10. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hvn
10/6/05



HOANG V. NGUYEN
PRIMARY EXAMINER